

# INTRODUCTION

## **Project Area**

The LACPR project area stretches across Louisiana's coast from the Pearl River on the Mississippi border to the Sabine River on the Texas border. The project area is comprised of two wetland-dominated ecosystems, the Deltaic Plain of the Mississippi River and the closely linked Chenier Plain, both of which are influenced by the Mississippi River.

The Deltaic Plain contains ecologically important estuaries fronted by numerous barrier islands and headlands, including the Chandeleur Islands, Barataria Basin Barrier Islands, and Terrebonne Basin Barrier Islands.

The Chenier Plain contains important diverse wildlife and fisheries habitat that extends from the Teche/Vermilion Bays to Louisiana's western border with Texas, and is characterized by several large inland lakes, marshes, cheniers (oak ridges), and coastal beaches.

## LACPR General Project Area



## **What's at Stake?**

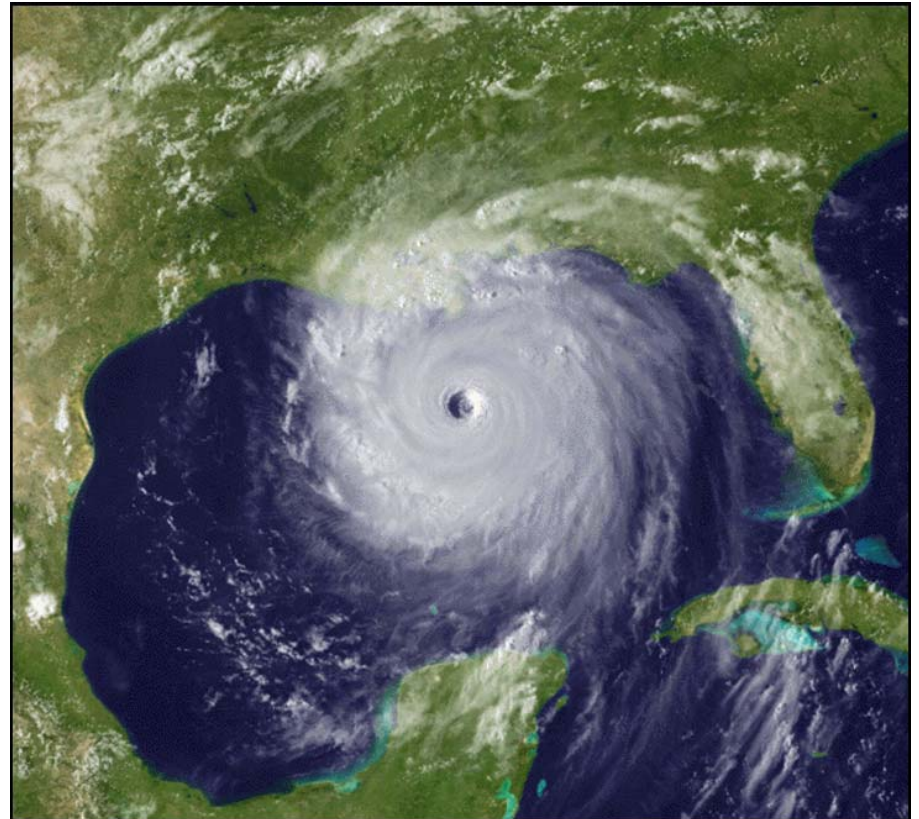
Hurricanes have caused extensive damages to coastal parishes in Louisiana since the time of earliest settlement. Over 40 hurricanes have impacted the coast of Louisiana within the last century. From 1900 to 1950, ten major storms (27 total) struck Louisiana's coastline killing 671 people. After 1950 the National Weather Service started naming storms and since then, thirteen hurricanes (Flossy, Audrey, Betsy, Camille, Carmen, Juan, Andrew, Georges, Isidore, Lili, Cindy, Katrina, and Rita) have caused extensive destruction and loss of life in Louisiana.

In 2005 alone, Hurricanes Katrina and Rita, which both grew to powerful Category 5 strength as they approached the Louisiana coast, claimed over 1,500 lives and could result in a total economic impact in the hundreds of billions of dollars in the State.

## *Hurricane Katrina*

Hurricane Katrina, which made landfall near Buras, Louisiana on August 29, 2005, brought widespread devastation and loss of life to areas of the Gulf Coast from Louisiana east to Mississippi and Alabama. Orleans, St. Tammany, Jefferson, Plaquemines, and St. Bernard Parishes suffered in unprecedented ways as floodwaters that had overtopped and breached the protection systems remained trapped behind the levees and floodwalls. Some 80% of New Orleans was flooded by Hurricane Katrina's surge. Over 180,000 homes in the New Orleans area were seriously damaged or completely destroyed during this storm event.

### **Hurricane Katrina Before Landfall**



## *Hurricane Rita*

About four weeks after Hurricane Katrina made landfall, Hurricane Rita hit the Gulf Coast of Louisiana near the Texas state line on September 24, 2005 causing significant flooding eastward all the way to New Orleans. Flooding occurred in some of the already heavily damaged areas of Orleans and St. Bernard Parishes. Additional flooding was reported in Slidell and Mandeville in St. Tammany Parish from the high tides in Lake Pontchartrain. Rita's storm surge caused devastating damage all along the Louisiana and southeastern Texas coast. The Mermentau River Basin remained flooded for several weeks after Hurricane Rita passed. Approximately 10,000 structures were flooded. The initial Red Cross estimate of residential units impacted by either Hurricane Katrina or Rita was more than 473,000, including more than 137,000 destroyed.

## **Response**

In response to the devastating destruction caused by Hurricanes Katrina and Rita, both the Louisiana legislature and the United States Congress provided legislative directives to investigate and integrate flood control, hurricane risk reduction and coastal restoration for South Louisiana. Development of plans to meet these directives is being undertaken as a joint effort of multiple parts of the Federal government and in partnership with the State of Louisiana. Although the State and Federal legislative directives are not identical, they do share the common fundamental objectives of considering the complete spectrum of landscape level uses and needs, and of incorporating a full range of potential risk reduction measures into an integrated plan. This plan will be evaluated based on its benefits in reducing storm damage to coastal communities and infrastructure, as well as for its ecosystem impacts and benefits.

## Federal Authority

Authorization and direction for the Louisiana Coastal Protection and Restoration (LACPR) project is granted under the Energy and Water Development Appropriations Act of 2006 passed in November 2005 and the Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act, 2006 passed on December 30, 2005, as part of the Defense Appropriations Act.

## Congressional Mandate

The U.S. Congress has directed the Secretary of the Army, through the Chief of the U.S. Army Corps of Engineers to **“conduct a comprehensive hurricane protection analysis and design...to develop and present a full range of flood control, coastal restoration, and hurricane protection measures...[and] the Secretary shall consider providing protection for a storm surge equivalent to a Category 5 hurricane...[and] the analysis shall be conducted in close coordination with the State of Louisiana.”**



## **State Authority**

The Louisiana Legislature established the Coastal Protection and Restoration Authority (CPRA) through Acts 2005 First Extraordinary Session, No. 8. Governor Blanco approved and signed Act No. 8 on November 28, 2005, calling for:

- A long-term comprehensive coastal protection plan combining hurricane protection and the protection, conservation, restoration, and enhancement of coastal wetlands and barrier shorelines or reefs.
- A plan that addresses hurricane protection and coastal restoration efforts from both short-term and long-range perspectives and incorporates structural, management, and institutional components of both efforts.

The coastal protection and restoration initiative directed by the language of Act 8 involves a master planning effort to support the full range of public and private interests in the coastal landscape. This planning effort entails providing both protection from hurricane surges and coastal ecosystem sustainability immediately and over the long term. In addition, the State planning effort is intended to support and guide the social and economic recovery efforts being administered through the Louisiana Recovery Authority.

The *purpose* of the LACPR study is to identify risk reduction measures that can be integrated to form a system that will provide enhanced protection of coastal communities and infrastructure, as well as for restoration of coastal ecosystems. The *scope* of the LACPR study is to address the full range of flood control, coastal restoration, and hurricane protection measures available, including those needed to provide comprehensive “Category 5” protection.

# **Planning Process**

## **Planning Process**

The work of policy makers and legislators requires development and consideration of alternatives. The formulation of plans for coastal risk reduction is being undertaken as a joint effort by Federal and Louisiana teams. The formulation process through which existing knowledge and understanding of the Louisiana coast is being used to develop alternative plans integrating hurricane risk reduction, flood control, and coastal restoration is depicted below. This process is built upon the basic formulation steps traditionally applied in Federal water resources planning. The LACPR effort will document the process objectively, so that all decisions regarding the selection of projects to be recommended for further design analysis or construction are fully documented and well supported.

The six planning steps are as follows:

1. Identifying problems and opportunities.
2. Inventorying and forecasting conditions.
3. Formulating alternative plans.
4. Evaluating alternative plans.
5. Comparing alternative plans.
6. Selecting a plan.

## **Problem Statements**

- The increasing vulnerability of coastal communities to inundation from hurricane induced storm damages due to coastal subsidence, wetland losses, and relative sea level rise.
- The increasing risk to people and property from catastrophic hurricane storm events
- National and regional economic losses from hurricane storm based flooding to residential, public, industrial, and commercial infrastructure / assets.
- Losses to high levels of productivity and resilience of South Louisiana coastal ecosystem due to natural conditions and coastal storm disturbances.
- Risks to historic properties and traditional cultures and their ties and relationships to the natural environment due to catastrophic hurricane storm events.

## **Planning Objectives**

- Reduce risk to public health and safety from catastrophic storm inundation.
- Reduce damages from catastrophic storm inundation.
- Promote a sustainable ecosystem.
- Restore and sustain diverse fish and wildlife habitats.
- Sustain the unique heritage of coastal Louisiana by protecting historic sites and supporting traditional cultures.

# Planning Steps

- Determine objectives for risk reduction:
  - Population health and safety
  - Regional and national economic welfare
  - Coastal resiliency / sustainability into long term
  - Ecosystem diversity and functionality
  - Maintenance of unique cultural heritage
- Delineate coast into basin planning units
- Establish planning timeframe
- Use best science and engineering to characterize what potential future base conditions could be considering:
  - Sea level rise and land subsidence
  - Redevelopment activities
  - Storm intensity and re-occurrence
- Inventory people, economy, and environmental features concentrated and disbursed in planning units
- Solicit input from public, agencies, and professionals on formulating measures for:
  - Structural / non-structural flood and storm damage reduction
  - Coastal restoration
- **Inventory array of measures proposed by stakeholders and team members (Purpose of Plan Formulation Atlas)**
- Conduct initial screening based on existing information, judgment, and expertise
- Combine measures to form sensible alternatives for risk reduction by planning unit
- Determine levels of detail for technical assessment of existing conditions and for alternative measures at varying scales
- Conduct evaluations against objectives/metrics, identifying costs and adverse impacts for:
  - Multiple potential futures without action
  - Multiple potential futures with alternatives
- Screen to identify best performing alternatives against objectives/metrics no matter which possible future actually occurs
- Identify screened alternatives that have balanced risk reduction to people, economy, and environment
- Rate remaining alternatives relative to:
  - Sustainability
  - Phase-ability in context of comprehensive plan
  - Operations and maintenance
  - Adaptability
- Compare alternatives, describe tradeoffs, present options
- Identify tentatively selected comprehensive plan/action for consideration
- Communicate risks/results on maps by planning unit
- Describe planning activities and results in:
  - Draft FTR
  - Programmatic Environmental Impact Statement (PEIS)
- Distribute Draft FTR and Draft PEIS for public and agency comment
- Review public / agency comments, address concerns, refine plans
- Document where additional planning / technical work may be required beyond what team anticipated necessary for public / agency review
- Prepare FTR and PEIS for upward submittal
- Deliver FTR and PEIS to Administration and Congress for potential further directed action

## **How will LACPR study be developing and analyzing alternatives?**

- A full range of flood control, coastal restoration, and storm damage reduction measures, including those needed to provide for comprehensive “Category 5” protection are being considered.
- Identified measures are based on extensive stakeholder involvement efforts with State, resource agencies, NGO’s, academia, and public.
- Identified measures will be integrated to form alternative plans for providing for a comprehensive coastal restoration and protection system.
- Risk-based approach will be used for evaluating alternatives for risk reduction to people, property and coastal landscape stabilization and performance.
- Risk reduction will be evaluated for design levels ranging from the 100-yr stage-frequency up to the most rare and severe storms

Analysis will consider uncertainty in multiple future projections including relative sea level rise, redevelopment rates, and storm intensity and frequency.



# **COORDINATION**

(Developing Inventory of Measures to be Considered)

## **Coordination Efforts**

- Metro New Orleans Hurricane Storm Damage Reduction System Improvement
- Interagency Performance Evaluation Task Force (IPET)
- State of Louisiana
  - Coastal Protection and Restoration Authority Master Plan
  - Louisiana Recovery Authority Community Redevelopment Planning
- Extensive public involvement
  - Workshops
  - Public scoping
  - Stakeholder forums
- Multi-discipline – broad organizational teams
  - State and Federal agencies
  - Academia
  - Dutch Rijkswaterstaat and other nations worldwide

## **Hurricane Risk Reduction and Flood Control Projects and Studies**

Numerous hurricane risk reduction and flood control projects, plans, and studies have been completed for areas in coastal Louisiana over the past 40 years. LACPR modeling efforts are integrating all existing conditions along the coast including current hurricane risk reduction projects and emergency repairs performed by Corps of Engineers Hurricane Protection Office, Protection and Restoration Office and Task Force Guardian. The LACPR team has outlined a vision for success that employs **a multiple lines of defense strategy**, incorporating as many of the existing hurricane risk reduction project components as possible into an integrated plan.

## Hurricane Risk Reduction Projects

The first Federal project to address the problem of hurricane-induced flooding in Southeast Louisiana was the Lake Pontchartrain, LA project authorized by Congress in the Flood Control Act of 1946. This project, completed in 1965, was designed to protect Jefferson Parish from storm-induced flooding from Lake Pontchartrain for 30-year frequency storms. That same year Hurricane Betsy hit the New Orleans area, causing more than \$8 billion of damage (in 2002 currency value) and the loss of 75 lives. Since that time, Congress has authorized additional projects at various locations in Southeast Louisiana to develop a more comprehensive hurricane risk reduction program. No hurricane risk reduction projects have been authorized west of the Morgan City and Franklin areas in Louisiana.

Although the existing projects have provided substantial hurricane risk reduction and flood control to areas of high-density population in the southeastern part of the State, they are not designed to protect against the full range (or highest level) of storm surges that could be produced by Category 3, 4 or 5 hurricanes. Because of damages caused by Hurricanes Katrina and Rita, Congress has authorized and appropriated funds for advancing major construction to completion on the existing hurricane risk reduction projects. The LACPR Technical Report will assume that all of these improvements will be in place when analyzing the impacts of any proposed recommendations. Many of the existing hurricane projects and much of the ongoing emergency work will become a part of any future enhanced level of

risk reduction. In many cases the existing system may function as a secondary line of defense thereby reducing risks to major population centers.

In addition to the Mississippi River and Tributaries (MR&T) flood control projects, local drainage is controlled by the Southeast Louisiana Urban Flood Control Project (SELA). In Jefferson and Orleans Parishes, SELA generally provides flood risk reduction on a level associated with a 10-year rainfall event, while reducing damages for larger events. The level of risk reduction for St. Tammany projects varies. Studies on urban flood control are also underway in St. Bernard, St. Charles, St. John the Baptist, and Plaquemines parishes.

The Corps of Engineers completed emergency repairs to 169 miles of levees and floodwalls and storm gates damaged or destroyed during Hurricane Katrina. This work, carried out by Task Force Guardian, restored the system to pre-storm authorized levels. Additional work approved by Congress is being implemented to advance other projects to completion. Other hurricane risk reduction work in Louisiana was authorized by Congress (July 2006) in emergency authorization bills for storm recovery. The LACPR team is including all of these emergency repairs as part of the existing conditions to be considered in evaluating needs for upgrading the risk reduction to “Category 5” levels.

**STATUS\***  
**Hurricane Risk Reduction and Flood Control Projects**

<b>Project</b>	<b>Level of Protection</b>	<b>% Complete</b>
Lake Pontchartrain, Louisiana, and Vicinity, Hurricane Protection Project	Standard Project Hurricane	80
New Orleans to Venice Project	100-year Level of Risk Reduction	84
West Bank and Vicinity, New Orleans, Louisiana, Hurricane Protection Project	Standard Project Hurricane	38
Larose to Golden Meadow, Louisiana, Hurricane Protection	100-year Level of Risk Reduction	96
Grand Isle and Vicinity, Louisiana	50-year Level of Risk Reduction	100
Morgan City and Vicinity, Louisiana, Hurricane Protection Project	Standard Project Hurricane	Not yet under construction
Flood Control, Mississippi River & Tributaries, Atchafalaya Basin, Louisiana	MR&T Project Design Flood	95
Flood Control, Mississippi River & Tributaries, Mississippi River Levees (MVN)	MR&T Project Design Flood	98

\* As of August 29, 2005

## Hurricane Risk Reduction and Flood Control Studies

<b>Study Description</b>	<b>Level of Protection Being Considered</b>
West Shore – Lake Pontchartrain	Level of Risk Reduction to be determined
Braithwaite Park, Louisiana, CAP Section 205	50-year Level of Risk Reduction
New Orleans to Venice, LA, Post Authorization Change Study, La Reussite to St. Jude	100-year Level of Risk Reduction
Oakville to La Reussite, Louisiana, Continuing Authorities Program Section 205	50 to 100-year Level of Risk Reduction
Southwest Louisiana Hurricane Protection Reconnaissance Study	Level of Risk to be determined
Flood Control, Mississippi River & Tributaries, Donaldsonville, Louisiana, to the Gulf of Mexico, Hurricane Protection Study	Level of Protection to be determined
Flood Control, Mississippi River & Tributaries Morganza, Louisiana, to the Gulf of Mexico, Hurricane Protection	100-year level of Risk Reduction (feasibility complete)
Flood Control, Mississippi River & Tributaries, Atchafalaya Basin, Louisiana, Lower Atchafalaya Basin Reevaluation Study	Level of Protection to be determined

# **Improvement of Metro New Orleans Hurricane Storm Damage Reduction System**

**(Post – Hurricanes Katrina and Rita)**

- Restore undamaged levees/floodwalls to originally authorized elevations by TBD (used as LACPR Existing Conditions)
- Accelerate completion of un-constructed portions of authorized projects
- Make improvements to optimize performance of existing system
- Raise system to provide 100-year level of protection by TBD (used as LACPR Base Conditions)



## **Coordination with Other Planning Efforts**

The people of South Louisiana cannot create a vision of a sustainable coastal future without having information about levels of hurricane risk reduction. To address the challenges facing South Louisiana, the LACPR plan is being coordinated with other planning efforts through a continuous exchange of ideas and information. In addition, the Corps of Engineers is working to consider and coordinate other water resources plans and projects including navigation, flood control, and ecosystem restoration. These other planning efforts and programs are discussed in the following pages:

## **Coordination with Other Planning Efforts (Cont'd)**

### ***Coastal Protection and Restoration Authority (CPRA) Master Plan***

The State of Louisiana established the CPRA as the single State entity that will interface with the Corps of Engineers on LACPR project coordination, and will identify and integrate State, parish, and local interests, as well as that of non-governmental organizations. The CPRA will develop, coordinate, make reports on, and provide oversight for a comprehensive hurricane risk reduction master plan and annual risk reduction plans. It will work in conjunction with State agencies, political subdivisions, including levee districts, and Federal agencies. The Plan will clearly portray the State's desires and needs relative to hurricane risk reduction and coastal restoration. The Master Plan will include a comprehensive strategy addressing the risk reduction, conservation, and restoration of the coastal area through the construction and management of hurricane risk reduction and coastal restoration projects. The CPRA has been directed to develop the Master Plan on an expedited schedule in order to coordinate the efforts of other ongoing risk reduction efforts, particularly those of the Corps of Engineers. A common process is being applied for plan formulation for the LACPR and CPRA efforts to facilitate the development of seamless, if not identical, hurricane risk reduction plans.

### ***Louisiana Recovery Authority***

The Louisiana Recovery Authority (LRA) guides the State's recovery and rebuilding efforts in the aftermath of Hurricanes Katrina and Rita. The LRA works across jurisdictions, in collaboration with local, State, and Federal agencies, to address short-term recovery needs and guide the long-term planning process. "Louisiana Speaks" is

## **Coordination with Other Planning Efforts (Cont'd)**

the LRA's long-term community recovery planning initiative. The LACPR team will share information on levee alignments, coastal restoration plans, and public feedback with the LRA Regional Visioning Team. In return, the Regional Visioning Team will share ideas about redevelopment scenarios and information on public preferences with the LACPR team. Continuous feedback between the groups will occur at all levels, including the scientists, engineers, and planners working within the two planning efforts.

### ***Mississippi Coastal Improvements Program (MsCIP)***

A technical evaluation will be conducted in close coordination and consultation with the State of Mississippi, Federal agencies, and stakeholders to determine the level of hurricane risk reduction and environmental restoration for coastal Mississippi. The water resources mission areas of hurricane risk reduction, flood control, interior drainage, navigation, and ecosystem restoration, must be integrated during plan formulation and evaluation to identify preliminary plans and designs that would provide increased hurricane risk reduction, as well as avoid or minimize unintended consequences from these actions. The LACPR team regularly communicates with the MsCIP team including face-to-face coordination meetings. The teams are using some common technical members to further coordinate development of both plans.

## **Comparison between Louisiana State Master Plan and Louisiana Coastal Protection and Restoration (LACPR) Study**

- Both address comprehensive flood & storm damage risk reduction & coastal restoration
- Identical planning unit delineations coast wide
- LACPR and State Master Plan is unified effort at macro level
- Similar planning objectives (State handling population at risk through evacuation)
- Both investigations have quality review requirements
- Both treat a wide variety of structural alignments and coastal features coast wide
- Both adopting non-structural planning of USACE Non-Structural Flood Proofing Committee
- Both studies will address MRGO closure in similar ways
- Both efforts collaborating on extensive public involvement
- Both include cost sharing

## **Coordination with Other Coastal Ecosystem Restoration Plans and Programs**

Long before the storm events of 2005, the Louisiana public and national policy makers recognized the need to restore and recover the valuable functions of the coastal wetland environment. This recognition led to the enactment of the Coastal Wetlands Planning, Protection and Restoration Act of 1990 (CWPPRA), and the completion and approval of plans such as Coast 2050 and the Louisiana Coastal Area (LCA) Ecosystem Restoration Plan. The LACPR team is examining those plans and others to develop a set of ecosystem restoration components for integration into the LACPR plan. Coastal restoration features contribute to the overall hurricane risk reduction system by providing storm surge reduction, levee protection buffers, wind shields, and long-term operations and maintenance cost reductions.

### ***Coastal Wetlands Planning, Protection and Restoration Act***

The CWPPRA program provides for targeted funds to be used for planning and implementing small scale, short-term projects that create, protect, restore and enhance wetlands in coastal Louisiana. By 2006, 138 CWPPRA projects had been approved and 67 had been constructed, preserving or enhancing over 52,000 acres of marsh. Project size ranges from nine acres to 36,121 acres, illustrating the diverse

## **Other Coastal Ecosystem Restoration Plans and Programs (cont'd)**

objectives and methods being employed by program initiatives. The types of projects include freshwater and sediment diversion, outfall management, dredged material/marsh creation, shoreline protection, sediment and nutrient trapping, hydrologic restoration, marsh management, barrier island restoration, and vegetation planting.

### ***Coast 2050: Toward a Sustainable Coastal Louisiana***

In 1998, the State of Louisiana and its Federal partners approved a coastal restoration plan entitled Coast 2050: Toward a Sustainable Coastal Louisiana. That document presented strategies jointly developed by Federal, State, and local interests to address Louisiana's massive coastal land loss problem. Principles and strategies from the Coast 2050 plan are used in developing new projects in the CWPPRA program. A larger effort to advance the Coast 2050 plan to implementation was initiated in a series of feasibility studies under the LCA authority.

## **Other Coastal Ecosystem Restoration Plans and Programs (cont'd)**

### ***Louisiana Coastal Area Ecosystem Restoration Plan***

The Louisiana Coastal Area (LCA) Ecosystem Restoration Study was initiated in 2001 by the Corps of Engineers and the State of Louisiana to address Louisiana's severe coastal land loss problem. The goal is to achieve and sustain a coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana and thus, contribute to the economy and well-being of the Nation.

The LCA Plan includes programmatic authorization of five near-term critical restoration projects including the Mississippi River Gulf Outlet(MRGO) environmental restoration, a small river diversion at Hope Canal, Barataria Barrier shoreline restoration, a small Bayou Lafourche river reintroduction, and a medium river diversion at Myrtle Grove with dedicated dredging. Programmatic authorization is also requested for a Science and Technology Program and associated demonstration projects, beneficial use of dredged material, and studies to modify existing water control structures. Standard authorization is requested for 10 other near-term critical restoration projects and large scale and long-term concepts such as Mississippi River Delta Management. This Plan will restore critical deltaic processes and geomorphic structures and sustain diverse habitats.

## **Other Coastal Ecosystem Restoration Plans and Programs (cont'd)**

The LCA Plan has been approved by the Chief of Engineers and the Assistant Secretary of the Army for Civil Works and transmitted to the Administration and Congress. The plan is awaiting action on a Water Resources Development Act bill for authorization.

### ***Coastal Impact Assistance Program***

The Coastal Impact Assistance Program (CIAP) was authorized by Section 384 of the Energy Policy Act of 2005. This federally funded program assists oil and gas producing coastal states and their political subdivisions in mitigating the impacts from Outer Continental Shelf (OCS) oil and gas production. CIAP funds can only be used for: 1) conservation, protection and restoration of coastal areas; 2) mitigation of damage to fish, wildlife and other natural resources; 3) planning assistance and administrative costs of CIAP compliance; 4) implementation of a federally approved marine, coastal or comprehensive conservation management plan; and 5) mitigation of the impacts of OCS activities via funding of onshore infrastructure projects and public service needs.



## **Other Coastal Ecosystem Restoration Plans and Programs (cont'd)**

### ***Comprehensive Habitat Management Plan for Lake Pontchartrain Basin***

The Comprehensive Habitat Management Plan for Lake Pontchartrain Basin was developed by a science and engineering committee and reviewed by a second panel of coastal experts. Proposed restoration projects that would also contribute to hurricane protection include:

- Restoration and protection of north shore riverine habitats (Upland Sub-basin).
- River reintroductions to sustain and re-build cypress swamps around Lake Maurepas (Upper Sub-basin).
- Restoration of the fringing marsh along the south shore of Lake Pontchartrain (Middle Sub-basin).
- Hydrologic restoration of St. Bernard and Plaquemines Parish's estuaries through constriction of the MRGO channel and river reintroductions (Lower Sub-basin).
- Restoration of wetlands on critical landbridges, including MRGO-Lake Borgne and East Orleans land bridges.
- Restoration of Chandeleur barrier islands.

## **Other Coastal Ecosystem Restoration Plans and Programs (cont'd)**

### ***Barataria-Terrebonne National Estuary Program***

Louisiana's Barataria and Terrebonne basins were nominated for participation in the EPA administered National Estuary Program on October 16, 1989. In his nomination letter for the Barataria-Terrebonne National Estuary Program (BTNEP), the Governor of Louisiana stated, "Louisiana faces a pivotal battle in the Barataria-Terrebonne Estuarine Complex if we are to do our part in winning the national war to stem the net loss of wetlands..."

A coalition of government, private, commercial, conservation, and civic interests developed a Comprehensive Coastal Management Plan for the Barataria-Terrebonne Basin. It includes several engineered coastal restoration features including restoration of the Barataria-Terrebonne barrier islands, long distance pumping of sediment to quickly create marsh, small freshwater diversions, some to nourish created marshes, and shoreline stabilization. The BTNEP Management Conference is working with Federal, State, and local agencies to implement the Comprehensive Coastal Management Plan. Teams composed of experts and citizens are helping to implement action goals, furthering the ideal of stakeholder involvement and consensus.

## **Coordination with Other Programs and Independent Groups**

Many independent groups have produced information, letters, reports, and articles related to the recovery, restoration, and protection of coastal Louisiana after the 2005 hurricanes. The team has been provided materials and in some cases worked closely with the Bring New Orleans Back Committee, American Society of Civil Engineers, and independent scientists and engineers from around the country. These interactions are critical to planning and the team will continue to pursue these information exchange opportunities. **A comprehensive list of measures suggested by independent groups and the general public, to date, are provided at the end of this Atlas. This listing also includes other coastal area plans and programs considered.**

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